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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/954,515	09/17/2001	Hyung-Chul Choi	M0023/7000D	9063

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EXAMINER

HON, SOW FUN

ART UNIT	PAPER NUMBER
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1772

DATE MAILED: 03/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/954,515

Applicant(s)

CHOI ET AL.

Examiner

Sow-Fun Hon

Art Unit

1772

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 18-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 18-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 September 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 1. 6) ☐ Other: \_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 18-28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. In independent claim 18 :

- a. The term “substantially” renders the claim indefinite and should be deleted;
- b. It is unclear whether the term “index” refers to the refractive index of the material, in which case the claim should be amended for clarification.
- c. It is unclear whether the term “metallic” means that the layer is formed of metals;
- d. It is unclear whether the unit “ohms/square” denotes electrical conductivity or sheet resistance which normally has said unit.

4. In claim 19, it is unclear what the conductors conduct. Do they conduct electricity?

5. In claim 25, it is unclear whether the embodiment of the one surface of the substrate bearing at least one of a hard polymer coating and a layer of silica features the substrate surface away from the conductive layer. In addition, it is unclear whether the polymer coating and the layer of silica belong to a Markush group, in which case it should be rewritten as such, or whether there is both a polymer coating and a silica layer present.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 18-26, 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yatabe et al. (US 4,234,654).

Yatabe et al. teaches a transparent polyester (polyethylene terephthalate) substrate (film having a light transmittance of 86 %), on which is a high refractive index titanium oxide is formed (laminated), then a metallic conductive layer is formed on the high index layer (silver and gold as a second layer), and a high index top layer (titanium oxide) formed on the conductive layer (column 10, lines 60-70).

Yatabe et al. teaches that titanium dioxide, tin oxide and indium oxide are equivalent to titanium oxide for the high index layer (column 5, lines 20-35). Since these materials have low electrical conductivity unless doped, it is the examiner's position that the titanium dioxide, tin oxide and indium oxide materials have the claimed sheet resistance (conductivity) of greater than 400 ohms/square and are electrically insulating.

Yatabe et al. teaches that polycarbonate, polyacrylate (acrylic resin) are equivalent to polyethylene terephthalate (polyester) for the substrate material (column 7, lines 50-70).

Because Yatabe et al. teaches that the conductive laminate is used as a transparent electrode structure for a liquid crystal display (column 9, lines 20-30), there is a layer of liquid crystal inbetween two electrode assemblies. Since the conductive layer in a liquid crystal display

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is patterned into a plurality of discrete electrodes, it would have been a result of routine experimentation as part of the process of electrode assembly to have patterned the top layer in order to divide the conductive layer into a plurality of discrete electrodes. A plurality of conductors would then be connected to portions of the top layer overlying the electrodes to serve as contacts for the electrodes.

Yatabe et al. teaches that a transparent top layer is laminated on the conductive laminate, and is formed of a hard plastic such as acrylic, silicon and melamine resins, and an inorganic material such as silica (silicon oxide) to improve weatherability or surface hardness (column 9, lines 1-15). It would have been obvious to one of ordinary skill in the art to have encapsulated the conductive laminate with the protective layer with a resultant protective layer on the surface of the substrate away from the conductive layer, so as to protect the entire laminate.

8. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Austin (US 5,556,694) in view of Yatabe et al.

Austin has a touch screen display apparatus (touch-sensitive video display) comprising a display screen (liquid crystal display) with a pattern of a plurality of discrete electrodes (pattern of spaced apart electrode regions) formed from a transparent conductive laminate (column 2, lines 15-65). A liquid crystal display has two electrode assemblies.

Austin, however, fails to teach the claimed transparent conductive laminate layers.

Yatabe et al. has been discussed above, and teaches that the claimed transparent conductive laminate is used as an electrode material for liquid crystal display, and that it has improved light stability, heat and chemical resistances (column 1, lines 5-45) with superior performance at low cost (column 2, lines 1-15).

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Because Yatabe et al. teaches that the transparent conductive laminate is used as an electrode material for liquid crystal display with improved light stability, heat and chemical resistances at low cost, it would have been obvious to one of ordinary skill in the art to have used the transparent conductive laminate of Yatabe et al. as the transparent conductive laminate of the liquid crystal display in the invention of Austin in order to obtain a touch screen display apparatus with the desired superior electrode performance at low cost.

Any inquiry concerning this communication should be directed to Sow-Fun Hon whose telephone number is (703)308-3265. The examiner can normally be reached Monday to Friday from 9:00 AM to 6:00 PM.

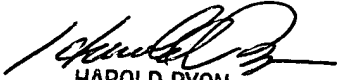
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached on (703)308-4251. The fax phone number for the organization where this application or proceeding is assigned is (703)872-9310.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0661.

SH

Sow-Fun Hon

03/20/03

  
HAROLD PYON  
SUPERVISORY PATENT EXAMINER  
1772 3/24/03